



Caltrans Division of Research,
Innovation and System Information

Research Results

Pavement

DECEMBER 2013

Project Title:

State Pavement Technology
Consortium, SPR-3 (074)

Task Number: 0220

Start Date: July 1, 1999

Completion Date: December 31, 2012

Product Category: New and improved standards, plans, and specification; new and improved manual, handbook, guidelines, and training; new and improved business practices, procedures, and processes; new and improved decision support tools, simulations, models, and algorithms (software)

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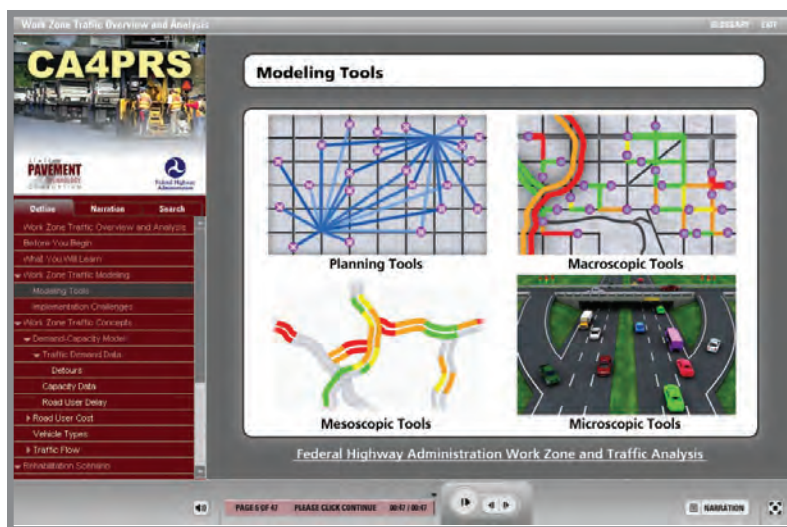
Collaborating on Pavement Research Technology

Four-state consortium pools resources identify and solve critical issues affecting pavement construction and maintenance

WHAT WAS THE NEED?

Caltrans partnered with three other states—Minnesota, Texas, and Washington—to pool funds and resources to develop effective and efficient research solutions that address the problems that California is facing with today's aging roadway system.

Each of the participating states of the State Pavement Technology Consortium (SPTC) provided funding for technical staff and university researchers to participate in project meetings focused on sharing information, identifying critical issues of mutual interest, and developing plans for joint research and testing. This consortium also offered the opportunity for technology transfer of the latest developments in the design, construction, reconstruction, and maintenance of highway pavements.



The CA4PRS (Construction Analysis for Pavement Rehabilitation Strategy) software tools are used globally to help planners and designers optimize pavement construction costs.



DRISI provides solutions and
knowledge that improve
California's transportation system.

WHAT WAS OUR GOAL?

The goal was to improve pavement infrastructures by collaborating with other states for information sharing, research, and technology transfer.

WHAT DID WE DO?

The SPTC focused on sharing knowledge, best practices, and technologies that have been deployed by other states and industries to improve pavement infrastructures. The approach was to combine knowledge with research and know-how through academia, industry, state departments of transportation (DOTs), and the Federal Highway Administration's efforts to explore new pavement products and technology that were ready to be deployed. The SPTC collaborated to produce products, technology, and standards of practice that increased efficiency, improved longevity, and brought safer roadway systems to the participating states. Tasks were assigned to the participating DOTs and academia to bring back for discussion and analysis in subsequent meetings.

WHAT WAS THE OUTCOME?

The SPTC developed numerous products, technologies, tools, and standard practices through knowledge sharing and collaboration. Examples of these achievements include the following.

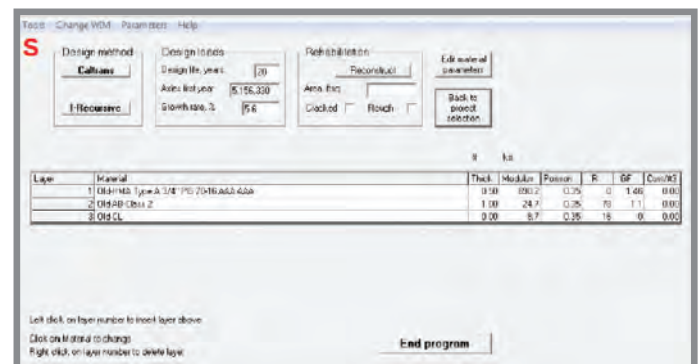
- Developed the CA4PRS (Construction Analysis for Pavement Rehabilitation Strategy) decision support tool. This software is widely used nationally and internationally to help planners and designers optimize pavement construction costs.
- Established groundwork for developing standards for construction of foamed asphalt, an in-place, flexible pavement rehabilitation strategy that transforms existing asphalt concrete into a stabilized base for a new pavement surface layer.
- Collaborated with users nationally to identify shortcomings of the Mechanistic-Empirical (ME) Pavement Design software, which led to developing CalME, ME software to analyze and design new flexible pavements and rehabilitate existing pavements.
- Trained Caltrans staff on new software, product standards, pavement material selections, and construction techniques through seminars in classroom settings and by distributing papers and fact sheets.

WHAT IS THE BENEFIT?

Participating in collaborative research brings in outside knowledge, innovative technology, and products that benefited the state. The consortium allowed Caltrans to share resources and maximize funding by pooling with other states to accomplish projects more efficiently and effectively.

LEARN MORE

For information about the SPTC:
www.pooledfund.org/Details/Study/144



The CalME tool can analyze the use of different materials in the context of climate and load inputs and determine the cost.